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basic imagery interpretation report

Ramenskoye Flight Test Center (S)

STRATEGIC WEAPONS INDUSTRIAL FACILITIES

USSR



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- 2. (S/WN) Significant developments in new and modified aircraft systems are discussed, including related activity observed at other facilities.
- 3. (S/WN) This report includes 30 annotated photographs, including an overview of the FTC with functional areas delineated; a location map; and a table of mensural data.

#### **BASIC DESCRIPTION**

4. (S/WN) Ramenskoye FTC is approximately 20 nautical miles southeast of Moscow (Figure 1). An overview of the FTC with the functional areas delineated (Figure 2) is keyed to Table 1—an outline of construction observed during this reporting period.

#### **Construction Activity**

5. (S/WN) Three small structures were built in the new Ilyushin area (Figure 2). A small quonset-type aircraft shelter (item 1, Figure 2 and Table 1) had been completed by

of measured distance), and vertical measurements are accurate to

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Table 1. Mensural Data for new Construction, Ramenskoye Flight Test Center, USSR (Items keyed to Figure 2)

This table in its entirety is classified SECRET/WNINTEL

\*Horizontal measurements are accurate to within

ltem	Structure		Dimensions*		Floorspace	Date	
itein	structure	L	(m) W	н	(sq m)	Complete	Remarks
1	Aircraft shelter				522	Apr 82	
2	Admin/engr bldg				1,635	Apr 82	3 stories
3	Spt bldg				99	Feb 81	
4	Spt bldg				502	Oct 81	
5	Hangar				5,593	Aug 81	New Tupolev hangar in east parking area
6	Spt bldg				744		Ucon
7	Stor bldg				455	Jul 81	
8	Admin/engr bldg				8,688		4 stories; ucon
9	Admin/engr bldg				1,014		2 stories; ucon
10	Prob shop				3,791	Jun 82	Multistory with 5-story admin/engr sect
11	Prob spt bldg				86		Footings measured; ucon
12	Prob spt bldg				231		Footings measured; ucon
13	Aircraft shelter				645	Mar 81	
14	Prob spt bldg				374		Ucon
15	Spt bldg				202		1 story; ucon
16	Prob admin/engr bldg				519		Foundation only
17	Hangar admin/engr addition				2.166		6 stories; ucon
18	Admin/engr bldg				12,719		5- and 10-story wings; ucor
_	Unid bldg				361		Construction stopped

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of measured distance), both at a 95% confidence level.

Z-14620/82 SECRET RCA-09/0026/82



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ing building (tem an (tem 3) had bee  6. (S/WN) A ing (tem 4) had b in the Ti 5), completed by parking area, is d paragraph 18. No made on the unid ing the previous struction appears least one story un personnel shelter. 7. (S/WN) building (tem 6) during the previou ued. In the suppo age building (tem 6) during the previou ued. In the suppo age building (tem 6) during the machine and in ing (tem 8) and a 1 gineering building 8. (S/WN) A story administratio 10) has been com Two probable sup 12) are under cons 9. (S/WN) A (item 13) in the been completed b 10. (S/WN) (item 14) in the completed by late institute (Lif, form struction included (item 15); the f administration included a six-story admit tion to the largest 17); and a multis tion/engineering	m 2) had been completed by and a small support building en completed by with a five-on/engineering section (item my). Item (item for the proposed a small support building with a moderground or possibly for a time the first of the form of the proposed and the five-on/engineering section (item my). Item (item for the proposed for the first of	2. (S/WN) In the spring of 1981 in sub-Q1, grading, backfilling, and the conion of three rectangular structures be-Grading for a probable taxiway to content the structures to the runway was also ved. This construction has proceeded y. Additional activity was observed in h 1982, when trenches, possibly for footwere observed.  3. (S/WN) Subarea Q2 was previously ted to be an FTC-related area.¹ During revious reporting period, mounds that been under construction near the southorner of subarea Q2 were paved with ete. The mounds resemble electronics ds, although no electronics equipment een observed.  4. (S/WN) The first observation of the KJACK A, the new Soviet strategic bombn significant observation at the FTC during period. The BLACKJACK A, originally nated the RAM-P, is a variable-geometry-aircraft similar to the Rockwell B-18 gic bomber. Although approximately third larger than the B-18, the KJACK A has a similar wing-fuselage to the mount of the KJACK A or significant observation, and engine ment (Figures 4 and 5).  5. (S/WN) The overall length of the KJACK A is and the unswept pan is
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17. (S/WN) The maximum takeoff weight
of the BLACKJACK A cannot be determined
without refined mensuration. The Rockwell B-
1B, which is smaller than the BLACKJACK A,
has a maximum takeoff weight of 477,000 pounds. <sup>2</sup>

18. (S/WN) Statements made by Soviet leaders in recent years indicated that a strategic bomber developmental program was underway, and, therefore, this aircraft was not unexpected. In June 1980, an area in the east parking area across from the Tupolev area was graded, and construction of a uniquely shaped hangar (item 5, Figure 2 and Table 1) began. By late summer 1981, the Tupolev hangar was externally complete (Figure 6). Based on size and configuration, the hangar was thought to be related to a new aircraft program, either bomber or transport. This hypothesis was supported by the introduction of the BLACKJACK

19. (S/WN) Snow melt from engine run-
up and numerous observations of vehicles
around the aircraft suggest that the
BLACKJACK A was undergoing flight testing.
Another significant activity related to the
BLACKJACK A occurred in March 1982 at
Akhtubinsk FTC , where foot-
ings for a hangar, which will be similar in size
to the one housing the BLACKJACK A at
Ramenskoye, were observed. Akhtubinsk is
the main weapons testing/integration facility
for aircraft in the USSR. The BLACKJACK A
will probably be flight tested for at least 2
years at Ramenskoye before going to Akhtu-
binsk for weapons systems tests.

20. (S/WN) The BLACKJACK A will probably be produced at Kazan Airframe Plant Gorbunov 22 where the BACKFIRE B and C are currently in production. A large assembly hall under construction at Kazan could be completed by the summer of 1983.

#### **BACKFIRE Bomber Fuselage Section**

21. (S/WN) The center fuselage section of a BACKFIRE bomber was identified on

(Figure 8). It had been identi-		
fied as an aerodynamic object and designated		
the RAM-N when first observed on a barge at		
the pier on the southern side of the airfield on		
(Figure 9). The BACKFIRE fuse-		
lage section was not seen at the FTC after		

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#### **RAM-M Aircraft**

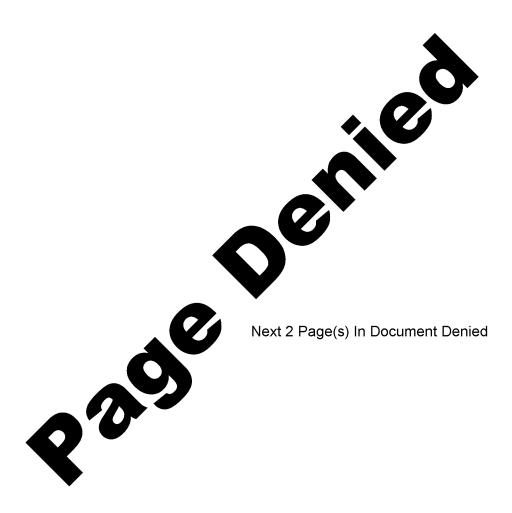
22. (S/WN) An	aircraft section on a barge	
at the pier on	has been desig-	
nated the RAM-M	(Figure 10). The final air-	
craft configuration	could not be determined	
until	by which time the nose	
and wings had been	n attached to the aircraft.	
The RAM-M has a high-aspect-ratio wing with		
a 40-meter span (Fig	ure 11). <sup>3</sup>	

23. (S/WN) The RAM-M v	vings were first			
seen without a canvas covering	gon			
and civilian markings were evident (Fig-				
ure 11). The aircraft was again observed on				
two small, white, unide	ntified objects			
were on the apron in front of the	ne aircraft (Fig-			
ure 12). The objects,	long with ap-			
parent fins on one end, could	be underwing			
fuel tanks.				

24. (S/WN) Frequent observations of vehicles and equipment near the RAM-M indicated that an active test program was underway. Two functions for this aircraft are possible. First, because of the civilian markings, the RAM-M may be an earth-resources exploitation platform. The Soviets have no modern aircraft, such as NASA's U-2, to perform this task. Second, it may be a high-altitude battlefield reconnaissance platform such as the US Air Force's TR-1. The determination of these possible functions was based primarily on the long, high-aspect-ratio wing. A narrow fuselage and wings of this type have typically been associated with high-altitude aircraft

more and an evaluation of the control of the contro				
25. (S/WN) Portions of a fuselage, simi				
n configuration to the RAM-M, were on the				
nain apron in the LII area from to				
A portion of another proba	ble			
RAM-M fuselage has been in the engine test				
area near this anron since				

- 6 -



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#### **FULCRUM A Fighter Aircraft**

- 26. (S/WN) Activity associated with the FULCRUM A (formerly known as the RAM-L) continued at the FTC during this period (Figure 13). A FULCRUM A tail section was frequently seen protruding from the quonset-type hangar.
- 27. (S/WN) Although aerodynamic flight testing of the FULCRUM A will probably continue at Ramenskoye, most flight testing will probably be conducted at Akhtubinsk FTC, where weapons test and integration exercises have been in progress.

#### **RAM-K Fighter Aircraft**

- 28. (S/WN) The RAM-K flight test program continued at Ramenskoye. The RAM-K was usually parked outside the LII area on a designated spot on the crossover taxiway. However, on \_\_\_\_\_\_ a RAM-K was involved in pre- or postflight activity in the crossover parking area (Figure 14).
- 29. (S/WN) Although RAM-K flight test activity continued at the FTC during this period, the observation of a highly modified RAM-K at Komsomolsk Airframe Plant Ordzhonikidze 126 \_\_\_\_\_\_\_, a production facility, on \_\_\_\_\_\_\_ was of greater significance (Figure 15).
- 30. (S/WN) The modifications consisted of repositioned vertical stabilizers, the addition of possible wingtip pylons, and an extension to the tail section. The vertical stabilizers appear to have been placed on the edges of the fuselage rather than in their usual position, centered over the engine bays, and were not canted outward, as on previous models. The presence of possible wingtip pylons would not be unusual for this type of aircraft. The pointed tail extension was in the area where the parabrake housing is usually located. A similar modification on US aircraft houses a spin chute for spin testing.

31. (S/WN) Highly modified aircraft are usually seen at an FTC rather than at a production facility. Although one or more of these modified aircraft may have been at the FTC, the RAM-Ks observed there have all had vertical stabilizers in the usual location.

32. (S/WN) One RAM-K fuselage, which				
may have a tail extension, was in the Sukhoy				
area on			but a canvas covering pre-	
cluded	cor	nfirmatio	n. This fuselage was still	
present			but very little activity was	
associated with it.				

#### **FROGFOOT A Ground Attack Aircraft**

33. (S/WN) Moderate activity was associated with the FROGFOOT A, formerly known as the RAM-J, during this period. FROGFOOT A aircraft were seen in the aircraft shelter (item 13, Figure 2) in the crossover parking area and in the Sukhoy area. Wing tanks were usually attached to the aircraft, and, on several occasions, unidentified stores were also attached.

#### RAM-H and RAM-E Aircraft

- 34. (S/WN) The RAM-H has been at the FTC since the early 1970s. During the reporting period, it was removed from its usual parking location in the LII area and placed in the Sukhoy area. By portions of the RAM-H, including the vertical stabilizer and wing sections, had been removed from the aircraft and were on the ground next to the fuselage (Figure 16).
- 35. (S/WN) Between
  the RAM-H fuselage, wings, and vertical stabilizer were removed from the Sukhoy area. The RAM-H has been inactive for a long period, and the program has probably been terminated. On the RAM-H was assembled and on static display in the aircraft museum at Moscow/Monino Airfield
- 36. (S/WN) The RAM-E was also at the Moscow/Monino museum on this program probably has also been terminated.

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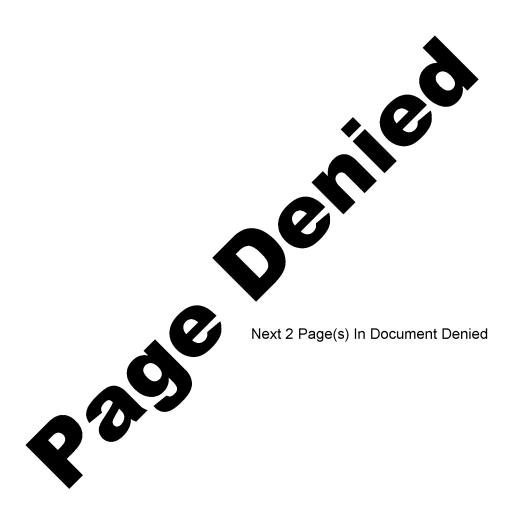
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#### **Unidentified Aircraft**

37. (S/WN) Three unidentified, probable fighter aircraft were seen at the FTC during this reporting period. One aircraft, seen on was just outside the LII area, on the crossover taxiway (Figure 17). The aircraft, which somewhat resembled an L-39 trainer, may have delta wings. The overall length was and the fuselage approximately length was approximately accurate wing span could not be determined. The aircraft could be a trainer because of its size and long forward fuselage section. 38. (S/WN) Another aircraft (not shown because of extremely poor interpretability of imagery), seen on was just outside the Sukhoy/Mikoyan areas. The overall fuselage length was approximately meters, and the wing span was approximately The length is comparable to that of the FULCRUM A; however, the aircraft appeared to have only a single vertical stabilizer. The wings appeared to be swept; however, the presence of a crane that appeared to be emplacing or removing a canvas covering precluded an accurate analysis of wing shape. 39. (S/WN) The third unidentified aircraft was seen on in the crossover parking area (Figure 18). The wing span of the aircraft was approximately which is comparable to that of the Mikoyan-designed FLOGGER, but wing tips, wing sweep, and

#### Airframe

imagery.

40. (S/WN) The airframe was seen on on a BACKFIRE B in the Tupolev area (Figure 19). No particular activity could be associated with the airframe, and no new details of its configuration could be determined.

overall appearance indicate that it is not a

FLOGGER. The crossover parking area is pri-

marily for Sukhoy-designed aircraft. Little else

could be determined regarding this aircraft

because of the poor interpretability of the

#### **BACKFIRE Bomber**

41. (S/WN) The usual level of BACKFIRE activity continued throughout this period. By the BACKFIRE B in the test and derelict area had been removed. By a BACKFIRE B had been returned to the test and derelict area; it had a finlike object on the top of the fuselage just behind the cockpit area (Figure 20). The function of this object is not known, and it had apparently been removed by mid-March 1982. A BACKFIRE C had been returned to the FTC by after having been absent since December 1980. This aircraft has probably been undergoing intensive flight testing since vehicles and fuel trucks have usually been nearby. Two or three BACKFIRE Bs and one BACKFIRE C have usually been seen in the Tupoley/east parking areas.

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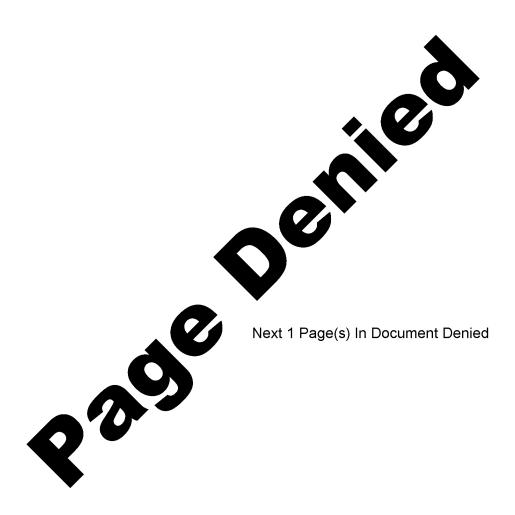
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#### **BEAR F Variant Aircraft**

- 42. (S/WN) The BEAR aircraft usually seen at the FTC were a BEAR A Mod, BEAR B, BEAR B Mod, BEAR C Mod, BEAR F, and BEAR F variants (mainly numbers 6 and 8). The BEAR A Mod has not been seen since December 1981. A new BEAR F variant (number 10) was identified at the FTC during this period. Variant 10 has several unique features. Although it has the high-lift wing common to most BEAR F variants, it does not incorporate a forward fuselage extension, no pods are on the vertical or horizontal stabilizers, and no pods or blisters are on the fuselage (Figure 21). This aircraft has a solid nose with a small, chinmounted radome; all previously identified BEAR F variants have a greenhouse nose.
- 43. (S/WN) Analysis of imagery of BEAR F Variant 10 when at Akhtubinsk FTC suggests that this aircraft may be capable of carrying air-to-surface missiles (ASMs). Only BEAR B and C aircraft have been equipped to carry ASMs; both of these aircraft have large radomes. The presence of a radome on Variant 10 may indicate an ASM capability. Further, Variant 10 has not been seen at Kirovskoye



Airfield the primary Soviet naval aviation test and development center, where antisubmarine warfare testing is conducted. Therefore, it is reasonable to assume that the aircraft is not associated with antisubmarine warfare.  Modified CANDID Aircraft  44. (S/WN) Several developments involving CANDID aircraft occurred at the FTC during this period. Two CANDIDs (bort numbers had previously been modified with a long tail extension. These aircraft, when at the FTC, have almost always been parked in the transient parking area. In the spring of 1981, however, CANDID	was returned to Tashkent Airframe Plant B Chkalov 84 where the tail extension was removed. This aircraft was subsequently returned to the FTC.  45. (S/WN) In mid-February 1982, CAN-DID again had a tail extension (Figure 22), but the tail extension on CANDID had been removed. The reason for this is not known, but it is possible that equipment on CANDID had malfunctioned and that the tail extension was reattached to in order to continue the test program. CANDID was observed in the transient parking and old Ilyushin parking areas.  46. (S/WN) A CANDID with a tail extension has been at Arkhangelsk/Kholm Airfield

- 17 -

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	when missile tests were being conducted at Nenoksa Naval Missile Test Center One CANDID has also been at Akhtubinsk FTC when missile tests were being conducted at Kapustin Yar Cruise Test Complex D Site 1 Both aircraft have probably been involved with the flight test phase of a cruise missile test.  47. (S/WN) CANDID had been modified with a new engine by (Figure 22). This engine, within a diameter nacelle, is over 6 meters long and is probably a prototype of a large, fuel-efficient, high-bypass-ratio turbofan engine. It is probably designed to power a very large transport aircraft. It is not unusual to mount a new engine on an operational aircraft in order to ob-	tain test data not available through static bench testing.  CLOBBER A Transport Aircraft  48. (S/WN) On a CLOBBER A with a conical tail extension just above the rear exhaust nozzle was in the old llyushin area. This modification was not seen again until the spring of 1982, when an aircraft with this modification was in the Yakovlev area (Figure 23). The purpose of this modification is not known.  CUB Transport Aircraft  49. (S/WN) A CUB modified with a finlike structure on the top of the fuselage, just aft of the wing, was first observed in the Antonov area on (Figure 24).
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52. (S/WN) On a helicopter lifting exercise was underway on the crossover taxiway in front of the LII area. One
HIP C helicopter was on each side of an aircraft fuselage section on a dolly (Figure 26). The two HIP Cs, with rotors turning, were connected by cable to the dolly and were probably preparing to lift the dolly and the fuselage.
53. (S/WN) A similar lifting exercise oc-
curred in July 1981. The exercise was apparently training in lifting heavy objects using two helicopters. While the technique is potentially dangerous, such expertise would permit the use of medium-lift helicopters when heavy-lift helicopters are not available.
Aerospace Components
54. (S/WN) One of the more significant programs underway at the FTC involves aero-

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space components. Although this activity was observed during the previous reporting period, little was known of the program at that time.  55. (S/WN) The history of the aerospace components is complicated. It involves activity at two facilities besides Ramenskove—Kuvbyshev Aerospace Production Plant 1  and Tyuratam Airfield 3  56. (S/WN) The exact function of these aerospace components is not known; how-	ever, they are probably components of a space launch vehicle.  57. (S/WN) A large structure was first seen at the FTC in November 1980. By the spring of 1981, the structure, which served as environmental protection for a meter, bullet-shaped object (Figure 27) very similar in appearance to the external fuel tank of the US space shuttle, had been removed. By  a 26-meter component was seen fully assembled (Figure 27). The 26-meter component was delivered by barge from Kuy-

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byshev to the FTC in November 1981. The meter component was delivered the same way the previous year. A more detailed analysis of the component and related activities at Ramenskoye, Kuybyshev, and Tyuratam may be found in a previous NPIC report. 5  58. (S/WN) The aerospace components are so large that air is the only efficient means of transportation. Two BISON B aircraft (bort were modified to	carry the components (Figure 28). The empennage of each BISON B is highly modified; vertical stabilizers were mounted outward on the horizontal stabilizers to allow for undisturbed airflow when flying with a mounted component. The modified BISON Bs are loaded by moving under a gantry crane holding the component (Figure 27). The component is then lowered onto the fuselage of the aircraft. The pointed end of the component is mounted facing aft to reduce vortex

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identical gantry crane has been built. The components will be mounted on the BISON Bs at Kuybyshev and flown to Tyuratam, where they will be removed and taken by transporter (Figure 27) to their designated assembly areas.  60. (S/WN) On BISON Was seen with a V-shaped support bracket mounted just in front of the empennage (Figure 29). It is not known what this bracket was designed to hold. Subsequent coverage showed the 26-meter component on however, the bracket may also have been designed to carry some other, as yet unseen, component. The support bracket had been removed when the BISON was again observed in May and June 1982.

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#### **Unidentified Object**

- 61. (S/WN) On an unidentified object was on the apron in the LII area. This object has been seen at various locations on the apron and strongly resembles the upper forward fuselage section of an aircraft, primarily the flight deck area. While the object is probably only a mock-up or a fuselage skin, two depressions give the appearance of being window shaped (Figure 30).
- 62. (S/WN) It is possible that, because of the other space-related activity in the LII area, this object is also space related. It is not comparable in size or configuration to any known Soviet aircraft.

#### **Telemetry Collection and Processing Center**

63. (S/WN) The Telemetry Collection and Processing Center is on the northern side

of the Yakovlev area (Figure 2). Although the Center has been present for some time, it has not been discussed in any previous NPIC report.

64. (S/WN) The Center consists mainly of two buildings and telemetry collection equipment (Figure 31). A large, probable telemetry processing building consists of a four-story, Lshaped wing and a two-story, rectangular wing. The telemetry collection equipment is usually on the access road in front of the probable processing building and usually faces the two runways. The equipment usually comprises four or five SHIP WHEEL radar sets. A small, rectangular building with a roofmounted, movable dome is near the parking area. This dome probably houses a theodolite. A square building of unusual design is next to this building. Three large, circular patterns are on three sides of this building. It is not known if this building is part of the processing center. 25**X**1

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(S) Comments and queries regarding this report are welcome. They may be directed to Warsaw Pact Forces Division, Imagery Exploitation Group, NPIC,	25X1 25X1
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